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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ADAMS, CHARLES D	

ART UNIT	PAPER NUMBER
2164	

DATE MAILED: 11/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/688,217	YOSHIDA, ISSEI	
	Examiner	Art Unit	
	Charles D. Adams	2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. In response to communications filed on 8 September 2006, claims 1-6, 8-12, and 13-16 are amended. Claims 1-16 are pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 5-7, 10, and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Esposito et al. ("A Machine Learning Approach to Web Mining").

As to claim 1, Esposito et al. teaches:

List generation means for generating a word list for each of at least two categories by extracting words from a learning document set (see page 192, Section 3, paragraph 1);

Unnecessary word determination means for relatively determining an unnecessary word for a category on the basis of a frequency of appearance of a given word in each other category by using the list generated by said list generation means (see page 193, paragraph 3, "In order to move quasi-stopwords down in the sorted dictionary, the MaxTF-PF^2 of each term is multiplied by a factor 1/CF(t), where CF(t)

(category frequency) is the number of class dictionaries in which the word t occurs. In this way, the sorted dictionary will have the most representative words of each class in the first entries, so that it will be enough to choose the first N words per dictionary in order to define the set of attributes"); and

Means for generating a document classification catalog by eliminating words determined to be unnecessary from each of the word lists (see page 193, paragraph 3. The first 'N' words per dictionary are chosen as representative words. The others are 'unnecessary', and are not included in the list of representative words. Therefore, they are 'eliminated'. Also see Table 1, page 194).

As to claim 2, Esposito et al. teaches wherein said list generation means generates a list indicating a frequency of appearance of a given word for each category (see page 193, paragraph 2, "class dictionary", and Figure 1, Class Dictionaries).

As to claim 5, Esposito et al. teaches document classification means for performing classification processing for classification target documents by using said document classification catalog (see page 194, section 4, paragraph 1).

As to claim 6, Esposito et al. teaches:

A classified document set storage device for storing documents classified according to at least two categories (see page 191, section 2, and page 194, Table 1);

A category table generation unit for generating a table, the table comprising (see page 193, paragraphs 1-2, "Class Dictionary", and Figure 1):

Word lists corresponding to each of the at least two categories wherein the word lists are generated by extracting words from a learning document set (see page 193, paragraphs 1-2, "Class Dictionary", Figure 1, and Table 1); and

Frequencies comprising the frequency of appearances of each extracted word within the learning document set (see page 193, first bullet, "MaxTF(i, t), the maximum value of TF (i, j, t) on all training documents of class i");

An unnecessary word elimination unit for eliminating an unnecessary word from a category in the table on the basis of the frequency of appearance in each other category of a given word (see page 193, paragraph 3, and the argument in regards to claim 1); and

A classification catalog storage device for storing the table from which the unnecessary word was eliminated by said unnecessary word elimination unit (see page 193, section 3, and the argument in regards to claim 1).

As to claim 7, Esposito et al. teaches:

A classification target document storage device for storing classification target documents to be classified (see page 197, last paragraph).; and

A document classification processing unit for performing classification processing for the classification target documents stored in said classification target document

storage device by using said table stored in said classification catalog storage device (see page 197, last paragraph).

As to claim 10, Esposito et al. teaches:

Generating a word list for each of at least two categories by extracting words from a learning document set (see page 192, Section 3, paragraph 1), the word list containing information on a frequency of appearance of each extracted word within each category (see page 193, paragraphs 1-2, "Class Dictionary", Figure 1, and Table 1);

Determining an unnecessary word for a category on the basis of the relative frequency of appearance of a given word within each other category (see page 193, and the argument in regards to claim 1); and

Eliminating words determined to be unnecessary words from each of the word lists (see page 193, and the argument in regards to claim 1).

As to claim 14, Esposito et al. teaches:

acquiring information on words from a document set, classifying the words according to category, and storing the words in a storage device (see page 193, "Class Dictionary", Figure 1, and Table 1. There can exist different classes);

Recognizing a frequency of appearance in each other category of a word belonging to a given category on the basis of the acquired information (see page 193, paragraph 3, and the argument in regards to claim 1);

Determining whether the word is unnecessary for identifying the given category on the basis of the recognized frequency (see page 193, paragraph 3, and the argument in regards to claim 1); and

Generating a document classification catalog by eliminating words determined to be unnecessary words (see page 193, and the argument in regards to claim 1).

As to claim 15, Esposito et al. teaches further comprising:

Storing said classification catalog into the storage device (see page 193, paragraph 3, and argument from claim 1).

As to claim 16, Esposito et al. teaches further comprising the step of performing classification processing for classification target documents by using the classification catalog stored in said storage device (see page 197, last paragraph).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3-4, 8, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esposito et al. "A Machine Learning Approach to Web Mining") in view of Neal et al. (US Patent 7,043,492).

As to claim 3, Esposito et al. teaches the system according to claim 1.

Esposito et al. does not teach wherein said unnecessary word determination means extracts a word belonging to a given category and determines it to be an unnecessary word in response to the word appearing more frequently in another category than is allowed by a given standard.

Neal et al. teaches wherein said unnecessary word determination means extracts a word belonging to a given category and determines it to be an unnecessary word in response to the word appearing more frequently in another category than is allowed by a given standard (see 8:56-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Esposito et al. in view of Neal et al., since Neal et al. teaches that "the present invention allows an item to automatically be classified using its attributes based on a classification schema and a mapping" (see 2:34-36).

As to claim 4, Esposito et al. as modified teaches the system of claim 3.

Esposito et al. as modified teaches wherein the given standard is determined according to a predetermined threshold (see Neal et al. 8:56-65).

As to claim 8, Esposito et al. teaches the system according to claim 6.

Esposito et al. does not teach wherein said unnecessary word elimination unit extracts a word belonging to a given category and eliminates the word as an unnecessary word from said table in response to the word appearing more frequently in another category than is allowed by a given standard.

Neal et al. teaches wherein said unnecessary word elimination unit extracts a word belonging to a given category and eliminates the word as an unnecessary word from said table in response to the word appearing more frequently in another category than is allowed by a given standard (see 8:56-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Esposito et al. in view of Neal et al., since Neal et al. teaches that "the present invention allows an item to automatically be classified using its attributes based on a classification schema and a mapping" (see 2:34-36).

As to claim 11, Esposito et al. teaches the method according to claim 10.

Esposito et al. does not teach wherein in said step of determining the unnecessary word, the unnecessary word is determined according to whether one word selected from the given category appears in said other categories more frequently than is allowed by a given standard.

Neal et al. teaches wherein in said step of determining the unnecessary word, the unnecessary word is determined according to whether one word selected from the

given category appears in said other categories more frequently than is allowed by a given standard (see 8:56-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Esposito et al. in view of Neal et al., since Neal et al. teaches that "the present invention allows an item to automatically be classified using its attributes based on a classification schema and a mapping" (see 2:34-36).

As to claim 12, Esposito et al. as modified teaches wherein said given standard is a value obtained from a predetermined given threshold (see Neal et al. 8:56-65).

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Esposito et al. ("A Machine Learning Approach to Web Mining") in view of Grasso et al. (US Pre-Grant Publication 2004/0254911).

As to claim 9, Esposito et al. teaches the system according to claim 6.

Esposito et al. teaches wherein said table contains information on each word, a frequency of appearance of each word (see page 193, "Class Dictionary", Figure 1, and Table 1),

Esposito et al. does not teach and a part of speech of each word.

Grasso et al. teaches and a part of speech of each word (see paragraph [0037]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Esposito et al. by the teaching of Grasso et al., since Grasso et al. teaches that "using this information, it is possible to determine whether a word is occurring with above average frequency in a specific text compared with how frequently it appears on average" (see paragraph [0039]).

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Esposito et al. "A Machine Learning Approach to Web Mining") in view of Neal et al. (US Patent 7,043,492), and further in view of Mohan et al. (US Patent 6,970,881).

As to claim 13, Esposito et al. as modified teaches wherein said given standard is determined according to said frequency of the word in said other categories (see page 193, section 3, paragraph 3 and the argument in regards to claim 1 and Neal et al. 8:56-65).

Esposito et al. as modified does not teach and a total frequency of all words in said other categories.

Mohan et al. teaches and a total frequency of all words in said other categories (see 8:48-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified Esposito et al. by the teaching of Mohan et al., since Mohan et al. teaches that "Concepts having probabilities within a certain range are selected as key concepts to represent the theme, or meaning, of an

object. By setting the range, it is possible to dramatically increase precision and recall for objects classification" (see 3:43-47).

Response to Arguments

8. Applicant's arguments filed 8 September 2006 have been fully considered but they are not persuasive.

Applicant argues that Esposito et al. does not teach the "frequency of appearance of a given word in each category", as recited in claim 1. This argument is incorrect. The measure CF(t) in Esposito et al., is a measure of word frequency across each category. Esposito et al. does teach how frequently the word appears on a categorical scope (number of categories in which the word appears, which can also be read as "a frequency of appearance of a given word in each other category"). Therefore, Esposito et al. teaches "unnecessary determination means for relatively determining an unnecessary word for a category on the basis of frequency of appearance of a given word in each other category". The measure CF(t) is still a measure of "frequency of appearance of a given word in each other category".

Applicant argues that Esposito et al. does not teach a "means for generating a document classification catalog by eliminating words determined to be unnecessary words from each of the word lists". This argument is incorrect. As seen in page 193, paragraph 3, "In this way, the sorted dictionary will have the most representative words

of each class in the first entries, so that it will be enough to choose the first *N* words per dictionary in order to define the set of attributes". By selecting only the first *N* words, the non-selected words are 'eliminated', as they cannot be attributes.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Adams whose telephone number is (571) 272-3938. The examiner can normally be reached on 8:30 AM - 5:00 PM, M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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